

RESPONSE

In view of the following remarks, the Examiner is respectfully requested to withdraw the rejections and allow all pending claims.

Formal Matters

Claims 1, 18, 27-29, 53, 55 and 57, 59-62 are pending after entry of the amendments set forth herein.

Claims 1, 16-18, 27-29, 53-55 and 57-62 were examined and rejected. No claims were allowed.

Claims 1, 55, and 57 have been amended. Support for the amendments can be found in the claims as originally filed and throughout the specification at, for example, page 10, paragraphs [0045] and [0046], page 15, paragraphs [0052] and [0053], and page 17, paragraphs [0058]-[0060].

No new matter is added.

Rejection under 35 U.S.C. §102(b)/103(a) – Item 4 (Office Action, page 3)

Claims 1, 28, 53, 57, and 61 have been rejected under 35 U.S.C. §102(b) for allegedly being anticipated by or, in the alternative, rendered obvious under 103(a) by Audino et al. (US Patent Publication No. 2002/0083686). In view of the amendments to the claims and the remarks made herein this rejection is respectfully traversed.

In the spirit of expediting prosecution and without conceding to the correctness of the rejection, claims 1, 53 and 57 have been amended to clarify that the backing element comprising a gasket is treated "to provide a treated surface of said gasket" and that the treated surface of the gasket is joined to "a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket".

Audiano teaches a device comprising a multi-well plate with a laminate layer over the top of the multi-well plate producing a series of individual sealed wells (see Figures 1-3 and page 2, paragraph [0020]). The Office Action equates the cross-linked elastomer of the laminate layer to the gasket of the present claims. However, the

cross-linked elastomer is (1) not the corona treated element, and (2) does not have a treated surface that is joined with a substrate to provide a sealed chamber.

Instead, Audiano teaches that a polypropylene film, not an elastomer, is corona treated on one side and the corona treated side is then coated with a cross-linked elastomer (page 3, paragraph [0028]). The untreated cross-linked elastomer is then used to seal the polystyrene plates (page 3, paragraph [0028]). As such, Audiano does not teach (1) treating a gasket "to provide a treated surface of said gasket" and then (2) joining the treated surface of the gasket to "a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket".

It is well established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."¹

Since the cited reference fails to teach formation of an array assay chamber that is sealed by the treated surface of the gasket, the cited reference fails to teach each and every limitation as found in the claims. Therefore, the Applicants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. §103(a) – Item 5 (Office Action, page 4)

Claims 18, 27, 55, and 59-60 have been rejected under 35 U.S.C. §103(a) as being unpatentable for allegedly being rendered obvious by Audino et al. (US Patent Publication No. 2002/0083686). In view of the amendments to the claims and the remarks made herein this rejection is respectfully traversed.

As noted above, claims 1, 53, and 57 have been amended to clarify that the backing element comprising a gasket is treated "to provide a treated surface of said gasket" and that the treated surface of the gasket is joined to "a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987), cert. denied, 481 U.S. 1052 (1987). See also, *Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 USPQ 2d 1001 (Fed. Cir. 1991).

gasket". Since dependent claims incorporate the limitations of the independent claims from which they depend, claims 18, 27, 55, and 59-60 also require these elements.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.² Second, there must be a reasonable expectation of success.³ Third, the prior art reference, or references when combined, must teach or suggest all the claim limitations.⁴

As noted above, Audino does not teach (1) treating a gasket "to provide a treated surface of said gasket" and then (2) joining the treated surface of the gasket to "a microarray substrate to produce an array assay chamber that is sealed by said treated surface of said gasket" as recited in the independent claims.

Since the cited reference fails to teach formation of an array assay chamber that is sealed by the treated surface of the gasket, the cited reference fails to teach each and every limitation as found in the claims. Therefore, the Applicants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. §103(a) – Item 6 (Office Action, page 5)

Claims 29 and 62 have been rejected under 35 U.S.C. §103(a) as being unpatentable for allegedly being rendered obvious by Audino et al. (US Patent Publication No. 2002/0083686) in view of Gilmore et al. (US Patent Publication No. 2003/0207099). In view of the amendments to the claims and the remarks made herein this rejection is respectfully traversed.

As noted above, Audino et al. fails to teach (1) treating a gasket "to provide a treated surface of said gasket" and then (2) joining the treated surface of the gasket to "a microarray substrate to produce an array assay chamber that is sealed by said

2 *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 21 USPQ2d 1941 (Fed. Cir. 1992).

3 *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986).

4 *In re Royka*, 180 USPQ 580 (CCPA 1974).

treated surface of said gasket". Since Gilmore has been cited for its teaching of consecutive plasma application, Gilmore fails to make up the deficiency of Audino et al. In particular, the combination of references still fails to teach treating the surface of a gasket and producing an array assay chamber that is sealed by the treated surface of the gasket.

As such, the combination of the references fails to teach or suggest each and every limitation found in the claims of the present invention. Therefore, since the cited references cannot render the present application obvious, the Applicants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. §103(a) – Item 7 (Office Action, page 6)

Claims 1, 16-18, 27-29, 53, and 55 have been rejected under 35 U.S.C. §103(a) as being unpatentable for allegedly being rendered obvious by Desrosiers et al. (US Patent No. 6,410,332) or Dunnington et al. (US Patent No. 6,376,256) or Stanchfield et al (US Patent No. 6,054,100) in view of Matsuzawa et al., (JP2000-300670 A). In view of the remarks made herein this rejection is respectfully traversed.

As noted above to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.⁵ Second, there must be a reasonable expectation of success.⁶ Finally, the prior art reference, or references when combined, must teach or suggest all the claim limitations.⁷

As will be described in greater detail below, the *prima facie* case of obviousness is deficient for at least two reasons: (1) the rejection is improperly based on non-analogous art; and (2) there is no suggestion or motivation to modify or combine the teaching of the references.

⁵ *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 21 USPQ2d 1941 (Fed. Cir. 1992).

⁶ *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986).

⁷ *In re Royka*, 180 USPQ 580 (CCPA 1974).

1. The Rejection is Improperly Based on Non-analogous Art

Under MPEP § 2141.01(a), in order for a reference to be relied upon as a basis for rejecting a claim under obviousness, “the reference must either be in the field of the applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned”.

For example, in *In Re Clay*, the Patent Office rejected claims directed to a process for storing a refined liquid hydrocarbon product in a storage tank having a dead volume filled with a gelled solution to prevent loss of stored product.⁸ The claims were rejected based on a reference that disclosed a process for reducing the permeability of natural underground hydrocarbon bearing formations using a gel similar to that claimed in the rejected patent.⁹ The Federal Circuit disagreed that the reference and claimed invention were part of the same endeavor and found that the inventions involved different fields of endeavor since the reference taught the use of the gel in a different structure for a different purpose under different temperature and pressure conditions.¹⁰ In addition, the court also found that the reference was not reasonably pertinent to the problem with which the inventor was concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks by considering a reference with plugging underground formation anomalies.¹¹

In addition, in *In re Oetiker*, the applicant claimed an improvement in a hose clamp which differed from the prior art in the presence of a preassembly “hook” which maintained the preassembly condition of the clamp and disengaged automatically when the clamp was tightened.¹² The Board relied upon a reference which disclosed a hook and eye fastener for use in garments, reasoning that all hooking problems are analogous.¹³ The Federal Circuit disagreed and held the reference was not within the field of applicant’s endeavor, and that the reference was not reasonably pertinent to the particular problem with which the inventor was concerned because it had not been

8 *In Re Clay*, 966 F.2d 656, 23 U.S.P.Q.2D (BNA) 1058 (Fed. Cir. 1992) (Exhibit A).

9 *Id.* at 658.

10 *Id.* at 659.

11 *Id.* at 660.

12 *In re Oetiker*, 977 F.2d 1443, 24 U.S.P.Q.2D (BNA) 1143 (Fed. Cir. 1992) (Exhibit B).

13 *Id.* at 1446.

shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments.¹⁴

Matsuzawa et al. is directed to treating resin material of a syringe so that the plunger can slide freely within the inner wall of the syringe cylinder.¹⁵ In contrast, Desrosiers et al., Dunnington et al., and Stanchfield et al. are directed to fabrication of multi-well structures, such as microtitre plates, for chemical sampling, analysis or synthesis. One seeking to solve a problem of sealing an assay array chamber that includes an addressable array would not reasonably be expected or motivated to look to syringes to solve the problem. As such, under *In re Oetiker* Matsuzawa et al. is not within the field of applicant's endeavor and is not "pertinent to the particular problem with which the inventor was concerned".¹⁶

2. *There is no Suggestion or Motivation to Modify or Combine the Teaching of the References*

If, in *arguendo*, Matsuzawa is deemed to be analogous art, the *prima facia* case of obviousness is still deficient because there is no suggestion or motivation to combine the teaching of the cited references.

Under MPEP §2143.01, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." In addition, the test for an implicit showing is "what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested".¹⁷

In addition, in *Ruiz v. A.B. Chance Co.*, the subject patent claimed a method for underpinning a slumping building foundation using a screw anchor attached to the

14 *Id.* at 1447.

15 See Matsuzawa et al., abstract.

16 MPEP § 2141.01(a)

17 MPEP §2143.01

foundation by a metal bracket.¹⁸ A first prior art reference taught a method using a screw anchor with a concrete bracket, and a second prior art reference disclosed a method using a pier anchor with a metal bracket.¹⁹ The court found motivation to combine the references to arrive at the claimed invention because each reference was directed "to precisely the same problem of underpinning slumping foundations."²⁰

In contrast to Ruiz, the references cited in the Office Action are "not directed to precisely the same problem" and the "nature of the problem to be solved" by each references is different. In particular, Matsuzawa et al. is directed to treating resin material of a syringe so that the plunger can slide freely within the inner wall of the syringe cylinder.²¹ In contrast, Desrosiers et al., Dunnington et al., and Stanchfield et al. are directed to fabrication of multi-well structures, such as microtitre plates, for chemical sampling, analysis or synthesis. As such, while Matsuzawa et al teaches treating gaskets to allow for free and unobstructed movement of the gasket against another surface (such as the inner wall of the syringe), Desrosiers et al., Dunnington et al., and Stanchfield et al. teach joining structures to prevent movement of contents of one well to another well. A freely moving multi-well structure would completely contravene the principle of Desrosiers et al., Dunnington et al., and Stanchfield et al. Therefore, the teachings of the cited references cannot be combined to arrive at the present invention.

As noted in the MPEP, the level of skill in the art alone "cannot be relied upon to provide the suggestion to combine the references".²² The references cited in the Office Action are "not directed to precisely the same problem" and the "nature of the problem to be solved" by each references is different. Therefore, the bare assertion that the teachings can be combined to arrive the present invention based on the level of skill in the art is insufficient without "some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references".²³

18 *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 69 USPQ2d 1686 (Fed. Cir. 2004) (Exhibit C).

19 *Id.* at 1273, 69 USPQ2d at 1688.

20 *Id.* at 1276, 69 USPQ2d at 1690.

21 See Matsuzawa et al., abstract.

22 MPEP §2143.01, *citing Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999).

Accordingly, since the *prima facia* case of obviousness has not been met, the combination of the cited references cannot render the present application obvious. As such, the Appellants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. §102(e)/103(a) – Item 9 (Office Action, page 9)

Claims 1, 18, 27-29, 53, 55, 57, and 59-62 have been rejected under 35 U.S.C. §103(a) as being unpatentable for allegedly being rendered obvious by Blackburn (US Patent No. 6,875,619) in view of Matsuzawa et al., (JP2000-300670 A). In view of the remarks made herein this rejection is respectfully traversed.

For the same reasons described above, the *prima facie* case of obviousness is deficient for at least two reasons: (1) the rejection is improperly based on non-analogous art; and (2) there is no suggestion or motivation to modify or combine the teaching of the references.

Matsuzawa et al. is directed to treating resin material of a syringe so that the plunger can slide freely within the inner wall of the syringe cylinder.²⁴ In contrast, Blackburn is directed to fabrication of microfluidic devices that include biochannels or microchannels that comprise binding ligands that to capture target analytes in a sample. As such, one seeking to solve a problem of sealing a microchannel would not reasonably be expected or motivated to look to syringes to solve the problem.²⁵

Moreover, the cited references are also “not directed to precisely the same problem” and the “nature of the problem to be solved” by each of the references is different.²⁶ As noted above, Matsuzawa et al. is directed to treating resin material of a syringe so that the plunger can slide freely within the inner wall of the syringe cylinder.²⁷ In contrast, Blackburn is directed to fabrication of microfluidic structures that are surrounded by a gasket as depicted in Figs. 20 and 21. As such, while Matsuzawa et al teaches treating gaskets to allow for free and unobstructed movement of the gasket

23 MPEP §2143.01.

24 See Matsuzawa et al., abstract.

25 See *In Re Clay*, 966 F.2d 656, 23 U.S.P.Q.2D (BNA) 1058 (Fed. Cir. 1992) (Exhibit A).

26 *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 69 USPQ2d 1686 (Fed. Cir. 2004) (Exhibit C).

27 See Matsuzawa et al., abstract.

against another surface (such as the inner wall of the syringe), Blackburn teaches use of a gasket to prevent movement of contents of one well to another well. Therefore, the teachings of the cited references cannot be combined to arrive at the present invention.

Accordingly, since the *prima facia* case of obviousness has not been met, the combination of the cited references cannot render the present application obvious. As such, the Appellants respectfully request that this rejection be withdrawn.

Rejection under 35 U.S.C. §103(a) – Item 8 (Office Action, page 8)

Claims 1 and 28 have been rejected under 35 U.S.C. § 102(b) for allegedly being anticipated or, in the alternative, under 35 U.S.C. §103(a) for allegedly being obvious over Schleifer et al. (U.S. Patent Publication No. 2003/0231985).

Schleifer published after the filing date of the present application. Therefore, Schleifer is only available as art under 35 U.S.C. §102(e). Moreover, Schleifer is assigned to the same entity as the present application, i.e., Agilent Technologies, Inc. (See Exhibit D – Assignment Summary for Schleifer and Exhibit E – Assignment Summary for the present application). Therefore, under §103(c), art that “qualifies as prior art under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.” Since Schleifer and the present application are assigned to the same entity (see Exhibits D and E), Schleifer is not available as art.

As such, the Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

The Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,

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Enclosure:

- Exhibit A – *In Re Clay*, 966 F.2d 656, 23 U.S.P.Q.2D (BNA) 1058 (Fed. Cir. 1992).
- Exhibit B – *In re Oetiker*, 977 F.2d 1443, 24 U.S.P.Q.2D (BNA) 1143 (Fed. Cir. 1992).
- Exhibit C – *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 69 USPQ2d 1686 (Fed. Cir. 2004).
- Exhibit D – Patent Assignment Record for U.S. Patent Application Ser. No. 10/172,850.
- Exhibit E – Patent Assignment Record for U.S. Patent Application Ser. No. 10/722,950.

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